ble outer sheath **32**. As shown, each microswitch **37** is of a suitable known construction, e.g. employing a movable button **38** which can be depressed into a housing **39** to close the switch and complete a circuit. For this purpose, a flexible plate **40** is positioned above each microswitch **37** to close the circuit should the tube **13** be subjected to undue pressure at the location. Each microswitch **37** is also connected to a positive wire **41** to emit a signal to the control board (not shown) as above, to inform the operator of an excess pressure condition at the location of the activated microswitch.

It is noted that the microswitches **37** are mounted not only along the tube **13** but also circumferentially about the tube **13**. Further, the plates **40** are arranged to press radially inwardly relative to the tube axis.

Referring to FIG. **6**, the pressure sensitive devices may also be in the form of micro dip switches **42** disposed at intervals along the tube **13**.

Referring to FIG. **7**, wherein like reference characters indicate like parts as above, the sensing devices **26** may also be in the form of microswitches as in FIGS. **5** and **6** rather than in the form illustrated in FIG. **1**. Further, when used with pressure sensitive devices along the length of the tube of a fiberscope, the microswitches at the distal end are more sensitive than the sets of proximal switches. Thus, the distal microswitches are used for sensitive tip control while the other switches are used to prevent disruption of a structure, such as a colon.

This invention thus provides a tactile control device which can be easily incorporated into existing fiberscopes, particularly colonoscopes. In essence, the invention provides a remote sensing device which can be used to sense obstructions and to indicate such. An operator can the note the obstruction and visually adjust the fiberscope to avoid the obstruction or the control device may be interconnected with a system which automatically corrects the position of the distal end of a fiberscope to avoid a sensed obstruction and maneuvers the instrument to the center of a lumen by seeking the point of least resistance. Still further, the invention provides a tactile control device which can be used industrially to visually inspect objects which are relatively inaccessible.

What is claimed is:

1. In combination with a fiberscope including an elongated flexible insertion tube, an illuminating and viewing system mounted at a distal end of said tube and a control unit for bending said tube at said distal end in two planes;

a tactile control device including

a flexible hood circumferentially surrounding said illuminating and viewing system at said distal end, said hood projecting forwardly of said distal end; and

a plurality of sensing devices disposed circumferentially on said hood forward of said distal end, said sensing devices being responsive to an inward flexing of said hood to emit a signal indicative of the location of a flexed section of said hood.

2. The combination as set forth in claim **1** wherein each sensing device includes a pair of electrically conductive plates disposed in slightly spaced relation to each other and a pair of contact wires, each said wire extending from a respective one of said plates whereby upon flexing of a section of said hood, said plates therein contact with each other to complete an electrical circuit through said wires and emit said signal.

3. The combination as set forth in claim **2** which further comprises a control means connected to each said pair of wires and to said control unit of said fiberscope to activate said control unit in response to a received signal to direct said distal end in a direction opposite said flexed hood section.

4. The combination as set forth in claim **2** wherein said sensing devices include contact points inside a pressure-sensitive digital foam sheath and which further comprises an ohmmetric resistance measuring device connected to said contact points for converting said signal into an indication of pressure.

5. The combination as set forth in claim **2** wherein said plates are piezoelectric crystals.

6. The combination as set forth in claim **2** wherein said plates are microspring sensors.

7. The combination as set forth in claim **2** which further comprises a display board having indicators thereon to indicate the position of a flexed hood section relative to the remainder of said hood.

8. In combination with a fiberscope including a distal end, a flexible optic fiber means extending to said distal end to transmit light thereto, a lens at said distal end, an eyepiece at a proximal end to view an image through said lens, and a control unit for remotely bending said distal end;

a tactile control means comprising a flexible hood surrounding said distal end and projecting forwardly of said distal end, a plurality of sensing devices in said hood forward of said distal end to signal when a section of said flexible hood flexes upon contact with an obstruction.

9. The combination as set forth in claim **8** which further comprises a position display means to receive said signals from said sensing devices and to display signals in response thereto to an operator.

10. The combination as set forth in claim **8** wherein said sensing devices are contacts inside a pressure sensitive digital foam sheath.

11. The combination as set forth in claim **8** wherein said sensing devices are piezoelectric crystals.

12. The combination as set forth in claim **8** wherein said sensing devices are microspring sensors.

13. A tactile control device comprising

a flexible spherical hood for mounting on a distal end of a flexible tube, and

a plurality of pressure-sensitive sensing devices mounted in said hood, each said sensing device being responsive to an inward flexing of said hood for emitting a signal indicative of the location of a flexed section of said hood.

14. A tactile control device as set forth in claim **13** wherein said hood is a ball and said sensing devices are disposed circumferentially on said ball without fibroptic visualization.

15. A combination as set forth in claim **14** wherein said sensing devices are recessed within said ball.

16. In combination with a fiberscope including an elongated flexible insertion tube, an illuminating and viewing system mounted at a distal end of said tube and a control unit for bending said tube at said distal end in two planes;

a tactile control device including a flexible hood about said distal end, and a plurality of pressure-sensitive sensing devices disposed circumferentially on said hood, each said device being responsive to flexing of said hood to emit a signal indicative of the location of a flexed section of said hood.